

**What is claimed is:**

1. A photoconductive encoder wheel, comprising:
  - a grating cogwheel;
  - a sensor;
  - 5 two light sources perpendicular to each other; and
  - an incident surface of the grating cogwheel surrounding a protruding surface,
  - and a plurality of protruding wheel parts being divided in equal arc-shapes and
  - surrounding the grating cogwheel for focusing light of a light source by the
  - protruding surface of the grating cogwheel;
  - 10 wherein the light is refracted to corresponding protruding wheel parts for
  - focusing again, the light being transmitted to the sensor to generate different
  - phase sequence signals.
2. The photoconductive encoder structure as in claim 1, wherein the grating
- cogwheel further comprises a disk-shaped housing and a cylinder with a
- 15 columnar space therein protrudes from a center of the housing.
3. The photoconductive encoder structure as in claim 1, wherein the grating
- cogwheel is made of light-transparent materials.
4. The photoconductive encoder structure as in claim 1, wherein the housing of
- the grating cogwheel includes a refracting space to conduct light focused by the
- 20 protruding surface to the protruding wheel parts.
5. The photoconductive encoder structure as in claim 4, wherein the refracting
- space is set outside the cylinder; a plurality of oblique-cone spaces is located
- around the circumference of the housing and set concavely in the housing, and
- an inclined surface is between each oblique-cone space and the housing to
- 25 refract the light from the light source to the sensor.